Patent claims

1. An air humidifier having an electric fan unit arranged in a housing for delivering a through-flow of air between feed-air and discharge-air openings in the housing, at least one filter device for the through-flow of air and a device for releasing liquid to the through-flow of air, characterized by a first housing component (2), which accommodates the fan unit (4) with filter strips (6, 8) and feed-air (9) and discharge-air openings (10), and by a second housing component (3) as a vessel for storing liquid (21), the two housing components (2, 3) forming autonomous structural units which can be fixed to and detached from one another, and it being possible for the first housing component (2) to be utilized as a separate unit independently of the second housing component (3).

2. The air humidifier as claimed in claim 1, characterized in that the two housing components (2, 3) are of substantially box-like design and are placed or fitted freely onto or above one another or can be fixedly but releasably connected to one another by clamping members, e.g. screw-connection or plug-connection elements, such as clips or the like.

3. The air humidifier as claimed in claims 1 and 2, characterized in that the second housing component (3), having the cross-sectional shape and cross-sectional size of the first housing component (2), is designed in tub or pot form, engaging under the first housing component (2).

4. The air humidifier as claimed in claim 1, characterized in that the first housing component (2), in order to increase the surface area of the through-flow of air (12) and to reduce the noise level, has a double fan unit (4, 4').

5. The air humidifier as claimed in claims 1 and 4, characterized in that the first housing component (2) has at least one first filter stage (6) for the feed air and at least one further filter stage (8) for the discharge air of the through-flow of air (12).

6. The air humidifier as claimed in claim 1 or 5, characterized in that the first (6) and/or second filter stage (8), as seen in the direction of the through-flow of air (12), are configured as particle filters.

7. The air humidifier as claimed in claim 1 or 5, characterized in that the first filter stage (6) is designed as a feed-air filter door which is held on the first housing component (2) by means of hinge joints or by means of a plug connection and which covers the housing opening (5) for the feed air of the through-flow of air (12).

8. The air humidifier as claimed in claim 1 or 5, characterized in that the second filter stage (8) is designed as a discharge-air filter door and is held on the first housing component (2) by means of hinge joints or by means of a plug connection.

9. The air humidifier as claimed in claim 5 or 6, characterized in that an additional bacteria filter (20) or a chemical sterilization device is in each case assigned to the first (6) and/or second filter stage (8) in the first housing component (2).

10. The air humidifier as claimed in claims 1 and 4, characterized in that at least one ionization and ozonization assembly (18), which is assigned to the through-flow of air (12) and operates in accordance with the dielectric barrier discharge principle, is arranged in the first housing component (2), and a sorption catalyst unit is provided as discharge-air

filter (8) for eliminating excess ozone present in the through-flow of air (12).

11. The air humidifier as claimed in claim 10, characterized in that the ionization and ozonization assembly (18) is formed as a flat module or by a Siemens ionization tube.

12. The air humidifier as claimed in claim 10, characterized in that the sorption catalyst unit is formed by a carbon filter, in particular an activated carbon filter (8).

13. The air humidifier as claimed in claim 1, 2 or 4, characterized in that the first housing component (2) has at least one device (11), assigned to the through-flow of air (12), for releasing perfumes, aromas or the like, and in that, if a plurality of these release devices (11) are provided, the perfumes, aromas or the like can be activated separately on an individual basis or in combination with one another in order to form a combination of perfumes.

14. The air humidifier as claimed in claim 13, characterized in that the device (11) for releasing perfumes, aromas or the like is formed by one or more vessels, in particular in tube or cup form, with a liquid or solid storage medium, e.g. silica gel, aluminum oxide or the like, accommodated therein, and in that the perfumes and aromas or the like are stored in the storage medium and can be discharged from the storage medium by an in particular gaseous medium, e.g. the through-flow of air (12).

15. The air humidifier as claimed in claims 13 and 14, characterized in that the devices (11) for releasing perfumes, aromas or the like which are assigned to the through-flow of air (12) are connected upstream and/or downstream of the sorption catalyst unit (18).

16. The air humidifier as claimed in claim 1, characterized in that the first housing component (2), on the base side, has passage openings (13, 13'), which can be controlled by pivotable flaps (14, 14'), for a branched-off part (12') of the through-flow of air which can be guided into and out of the second housing component (3).

17. The air humidifier as claimed in claims 1 and 2, characterized in that the second housing component (3) has a filling or refilling opening (18') for liquid (21), which can be controlled by a flap formed by a pivotable or slideable closure member.

18. The air humidifier as claimed in claims 1 and 2, characterized in that the second housing component (3), in order to form a filling or refilling opening for liquid (21), projects transversely outward beyond a side wall of the first housing component (2) by means of a partial length (3') and/or a partial width.

19. The air humidifier as claimed in claim 18, characterized in that the partial length (3') and/or partial width of the second housing component (3) which serves as the filling or refilling opening can be closed off by a pivotable, slideable or plug-connection component.

20. The air humidifier as claimed in claim 2 or 4, characterized in that the transfer of liquid to the branched-off part (12') of the through-flow of air (12) in the second housing component (3) can be increased and/or adjusted by means of at least one wettable evaporation body, a partial length of which is immersed in the liquid.

21. The air humidifier as claimed in claim 20, characterized in that the evaporation bodies are formed

as floating bodies (22), in particular spherical in form and made from a plastic, e.g. polyethylene, or as woven fabrics, folded components (24), e.g. paper strips, or disk bodies (23) rotatably supported by floating bodies, or the like, a section of which is permanently immersed in the liquid (21), while the remaining section projects into the branched-off part (12') of the through-flow of air (12).

22. The air humidifier as claimed in claims 1, 3, 16, characterized in that the second housing component (3) is configured on the inner side with a removable film or foil (21') or the like made from a flexible material.

23. The air humidifier as claimed in claim 22, characterized in that the film or foil (21') is formed from a copper-containing material or a similar material.

24. The air humidifier as claimed in claim 22, characterized in that the film or foil (21'), on the inner side, bears, in a fixed position or loosely, an inlay body in strip or plate form and made from copper or a copper alloy.

25. The air humidifier as claimed in one or more of the preceding claims, having a first housing component with fan, filter, perfuming, ionization and ozonization devices accommodated therein, characterized by a first, substantially box-like housing component (2') and a second, pot-like housing component (3') as a liquid storage device with an open side, via which the first housing component (2') can be inserted into the second housing component (3'), it being possible for passage openings (13, 13') for a branched-off partial quantity (12') of the through-flow of air (12), which are closed off on the base side in the first housing component (2') to be automatically moved into an open position in

the inserted state, and for the passage openings (13, 13′) to be automatically closed when the first housing component (2′) is pulled out of the second housing component (3′).

26. The air humidifier as claimed in claim 25, characterized in that the passage openings (13, 13′) can be controlled by means of pivotable or slideable closure elements (14, 14′) which can be moved into the open position by means of run-on bodies arranged in a fixed position in the second housing component (3′), e.g. pins (15), strip parts or the like, as a result of the weight or plug-connection force that can be applied by the first housing component (2′) during the plug-connection movement of the first housing part (2′).

27. The air humidifier as claimed in claim 25, characterized in that the feed-air and discharge-air openings for the through-flow of air (12) are formed in the top side of the first housing component (2′), adjacent to and at a distance from one another.

28. The air humidifier as claimed in claims 1 and 2, characterized in that the second housing component (3′) bears against a tube or hose line (34), and in that the second housing component (3′) can be periodically filled or refilled with liquid (21), either manually or with continuous automatic control, via the tube or hose line (34).

29. The air humidifier as claimed in claim 1, 5 or 8, characterized in that the filter stage (8) for the discharge air is formed in a side wall and/or in the top side of the housing component (2).